ARM Group LLC
Engineers and Scientists

September 17, 2020

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: NAPL Completion Report
Area B: Parcel B13 (B13-086-SB)
Tradepoint Atlantic
Sparrows Point, Maryland

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), initiated a Pre-Development Supplemental Investigation of Parcel B13 in December 2018 within a designated pre-development area (the Site) on the TPA property located in Sparrows Point, Maryland. This investigation was later placed on permanent hold due to a change in the development plan for this area. During the field activities, a trace NAPL sheen was observed in the soil core of B13-086-SB from 21.5 to 23 feet below ground surface (bgs). The location of B13-086-SB is shown on **Figure 1**. In accordance with the standard procedures of this project, the observation of non-aqueous phase liquid (NAPL) in the soil core warranted the installation of a temporary monitoring point (piezometer) to assess potential NAPL mobility. An attempt was made to install a NAPL screening piezometer on December 12, 2018 but was unsuccessful due to borehole collapse. Due to the investigation subsequently being placed on hold, a piezometer was not installed in 2018. However, the Site was revisited on June 9, 2020 and a NAPL screening piezometers was installed with a screen interval from 14 to 24 feet bgs. The combined soil boring and piezometer construction log is provided as **Attachment 1**.

Immediately following the installation of the screening piezometer, ARM used an oil-water interface probe to assess the presence of NAPL. NAPL gauging measurements were also collected at least 48-hours and 30-days after the piezometer was installed. The final measurement was recorded on July 13, 2020. During all required gauging events, no NAPL was detected in the screening piezometer. The specific gauging details are provided below:

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B13-086-PZ Gauging Information

Gauging Date	Depth to NAPL (feet TOC)	Depth to Water (feet TOC)	NAPL Thickness (feet)
6/9/2020	-	16.68	-
6/15/2020	-	16.69	-
7/13/2020	-	16.52	-

TOC: Top of Casing

On July 23, 2020, screening piezometer B13-086-PZ was abandoned in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. The piezometer was gauged a final time immediately prior to abandonment, which confirmed that NAPL had not accumulated in the casing. The abandonment form is included as **Attachment 2**. No additional action is planned in the vicinity of B13-086-SB.

If you have questions regarding any information covered in this document, please feel free to contact ARM Group LLC at (410) 290-7775.

Respectfully Submitted,
ARM Group LLC

Leandra M. Glumac
Project Geologist

Eric S. Magdar, P.G.
Vice President

FIGURES


Soil Boring / NAPL piezo
Site Boundary
Parcel Boundary
Parcel B13
Parcel B20
B13-086-SB
Parcel B13 Pre-Development Site
Parcel B5
Parcel B13
Parcel B20
Parcel B13: B13-086 NAPL Screening Piezometer
Aerial View
September 17, 2020
Figure
1
ARM Group LLC
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0 62.5 125 250
Feet
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010213

ATTACHMENT 1

ARM Group LLC
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Boring ID: B13-086-SB/PZ

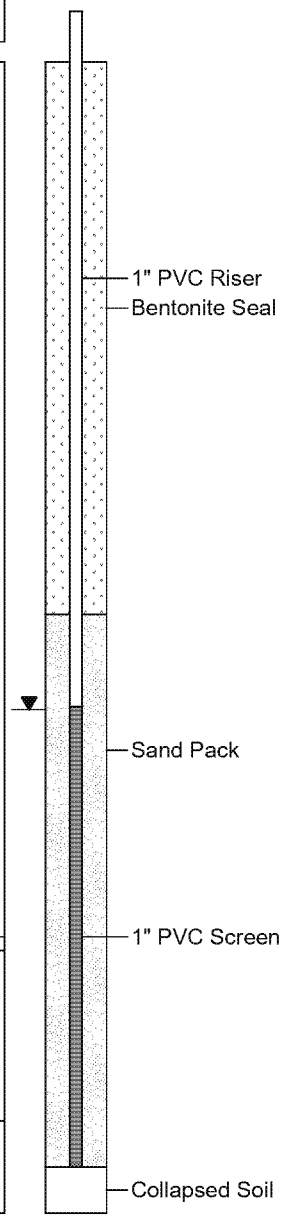
(page 1 of 1)

Client	: Tradepoint Atlantic
ARM Project No.	: 20010213
Project Description	: Sparrows Point - Parcel B13
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: GSI
Driller	: T. Moyer, D. Marchese
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 12/12/18, 6/9/20
Piezometer Installation Date	: 6/9/20
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 561042.0
Easting (US ft)	: 1462232.6
48-Hr DTW	: 16.69' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B13-086-SB-1	(0-19') SLAG, SAND and GRAVEL with trace COBBLES, medium dense, grayish brown and light gray, dry to moist then wet at 18' bgs, non-plastic, non-cohesive, small (fine to coarse) sand layer at 9.7' bgs with trace brick		
		-				
	60	0.2				
		2.6				
		4.7	B13-086-SB-5			
5		-				
		-				
	50	2.9				
		4.9				
		0.1			SW/GP	
10		-				
		-				
	30	-				
		3.3				
		0.2				
15		-				
		-				
	64	1.6				
		2.2				
		0.2		(19-19.3') SILT with SAND, firm, bluish gray, moist, low plasticity, cohesive	ML	
20		-		(19.3-23') SLAG, SAND and GRAVEL-sized, gray, wet, non-plastic, non-cohesive; with yellowish brown fine to coarse sand layer from 19.7-20' bgs	SW/GP	
		-				
	60	-				
		-		(23-25') NO RECOVERY	NA	
		-				
25				End of Boring		



Wet at 18' bgs

Trace sheen 21.5-23' bgs

Boring terminated at 25' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface

Riser Stickup: 3.40' ags
Riser: 0 - 14' bgs
Screen: 14 - 24' bgs [Slot Size: 0.010"]
Sand Pack: 12 - 24' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 12' bgs [Grain Size: bentonite chips]

ATTACHMENT 2

Well/Piezometer Abandonment Form

Well/Piezometer ID: B13-086-PZ

General Project Information:

Client: Tradepoint Atlantic

Site Location: Sparrows Point, MD

Parcel ID: B13

Abandonment Date: 7/23/2020

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → Grout (Bentonite Chips)

Field Equipment: Oil-Water Interface Probe

ARM Representative(s): R. Clancy

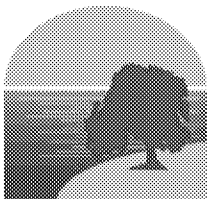
Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 27.40'	Depth to Water (TOC): 16.65'
Measured: 27.54'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B13-086 Screening Piezometer**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):



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